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| 10/533,821 | 01/06/2006 | Ronnie L. Thomas | 206,976 | 7840 |

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| EXAMINER | |
|---|---|
| ADMASU, ATNAF S | |

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| 4171 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/533,821 | THOMAS, RONNIE L. | |
| | Examiner | Art Unit | |
| | ATNAF ADMASU | 4171 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☒ Claim(s) *16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *5/3/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/15/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Objections*

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

**Misnumbered claim 16 (second occurrence) to 21 have been renumbered as claims 17-22.**

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1-4 is rejected under 35 U.S.C. 102(b) as being anticipated by Miller (US 5494935).

Claim 1-4 of the present invention claim a treatment fluid composition comprising: water and a chelant in particulate or a salt thereof. Miller (US 5494935) describes the most common and widely known treatment for metal poisoning is chelation therapy that involves a chelating agent such as sodium salts of EDTA in aqueous solution (see column 2, lines 13-28).

Claim 1-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Frenier (US 6436880).

Regarding claim 1, the present invention claims that a well treatment fluid composition, comprising: water and a chelant in particulate form or a salt thereof. This corresponds to the teaching of Frenier where a well treatment fluid comprises a chelant of hydroxyethyliminodiacetic acid (HEIDA) or a salt in aqueous medium (see claim 1).

Regarding claim 2, the present invention claims the chelant is selected from the group consisting of: ethylenediaminetetraacetic acid (EDTA), hydroxyethylethylenediaminetracetic acid (HEDTA), hydroxyethyliminodiacetic acid (HEIDA), diethylenetriaminepentaacetic acid (DTPA), 1,2-cyclohexanediaminetetraacetic acid (CDTA). Frenier teaches that the chelant is hydroxyethyliminodiacetic acid (HEIDA) or hydroxyethylethylenediaminetriacetic acid (HEDTA) (see claim 3).

Regarding claim 3, the chelant is selected from a free acid, a sodium salt, a potassium salt, and an ammonium salt. Frenier teaches that the chelant is selected from a free acid, a sodium salt, a potassium salt, or an ammonium salt (see claim 3).

Regarding claim 4, the present invention claims the fluid has an acid selected from the group consisting of hydrochloric, acetic, and formic acids, and mixtures thereof. Frenier teaches that the fluid's acid is selected from HCl, formic acid, acetic acid, or mixtures thereof (see claim 2).

Regarding claim 5, the present invention claims the chelant in the fluid comprises from about 0.1 to 2 mole per liter of the composition. Frenier teaches the chelant concentration, as calculated, ranges from 0.02 mole/liter to 0.35 mole/liter (see page 2, column 1, paragraph [0015]. The prior arts concentration overlaps with that of the present invention.

Regarding claim 6, the present invention claims the particulate chelant in the fluid is suspended in the solution. Frenier teaches that the pH of the fluid is between 1 and 4 and further teaches that EDTA has relatively low solubility at pH<4 (see column 3, line 7-53).

Regarding claim 7, the present invention claims the fluid further comprises a corrosion inhibitor wherein the corrosion inhibitor comprises a quaternary ammonium compound and at least one of an unsaturated oxygen compound or a reduced sulfur compound. Frenier teaches the corrosion inhibitor comprises a quaternary ammonium compound and at least one of an unsaturated oxygen compound or a reduced sulfur compound (see claim 7).

Regarding claim 8, the present invention claims the fluid further comprises an additive selected from the group consisting of a gelling agent, a wetting agent, an emulsifier, an agent preventing the formation of an emulsion, a solvent, a pH adjustment chemical, an inorganic fluoride salt, a diverting agent, a fluid loss additive, a chemical retarder, and mixtures thereof. Frenier teaches comprising an additive selected from a wetting agent, an emulsifier, an agent preventing the formation of an emulsion, a solvent, or a mixture thereof (see claim 8).

Regarding claim 9, the present invention claims the fluid's pH ranges from 0 to about 2.9 when EDTA is employed as the chelant. Frenier teaches that the pH of the well treatment fluid preferably is from about 1 to about 4 (see column 4, lines 57-60).

Regarding claim 10, the present invention claims a method of treating a subterranean formation, comprising: injecting a well treatment fluid composition comprising a particulate chelant or a salt thereof and water via a wellbore into a subterranean formation. Frenier teaches a method of acid-treating a subterranean formation, comprising: water; and chelant (see claim 9).

Regarding claim 11 and 12, the present invention claims the method of treating the subterranean formation wherein the particulate chelant is selected from the group consisting of: ethylenediaminetetraacetic acid (EDTA), hydroxyethylethylenediaminetracetic acid (HEDTA), hydroxyethyliminodiacetic acid (HEIDA), diethylenetriaminepentaacetic acid (DTPA), 1,2-cyclohexanediaminetetraacetic acid (CDTA), and wherein the chelant is selected from a free acid, a sodium salt, a potassium salt, or an ammonium salt. Frenier teaches the

method of treating a subterranean formation where the chelant is hydroxyethyliminodiacetic acid (HEIDA) and wherein the chelant is selected from a free acid, a sodium salt, a potassium salt, or an ammonium salt (see claim 11 and 12).

Regarding claim 13, the present invention claims the method of treating the subterranean formation wherein the chelant comprises from about 0.1 moles per liter to about 2 moles per liter. Frenier teaches the chelant concentration, as calculated, ranges from 0.02 mole/liter to 0.35 mole/liter (see page 2, column 1, paragraph [0015]. The prior arts concentration overlaps with that of the present invention.

Regarding claim 14, the present invention claims the method of treating the subterranean formation wherein the particulate chelant is suspended in the solution. Frenier teaches that the pH of the fluid is between 1 and 4. Frenier further teaches that EDTA has relatively low solubility at pH<4 (see column 3, line 7-53).

Regarding claim 15, the present invention claims the method of treating the subterranean formation where the fluid further contains acid selected from the group consisting of hydrochloric, acetic, and formic acids. Frenier teaches that the acid of the fluid is selected from HCl, HF, formic acid, acetic acid, or mixtures thereof (see claim 10).

Regarding claim 16, the present invention claims the method of treating the subterranean formation where the fluid contains additive selected from a corrosion inhibitor, gelling agent, wetting agent, an emulsifier, an agent preventing the formation of an emulsion, a solvent, a pH adjustment chemical, an inorganic fluoride salt, a diverting agent, a fluid loss additive, a chemical retarder. Frenier teaches the

composition further comprises an additive selected from a wetting agent, an emulsifier, an agent preventing the formation of an emulsion, a solvent, or a mixture thereof (see claim 16).

Regarding claim 17 and 18, the present invention claims the method of treating the subterranean formation wherein the fluid is injected below a pressure to exceed the minimum horizontal stress (the fracturing pressure). Frenier teaches injecting chemicals through the wellbore and into the formation at pressure sufficient to fracture the formation (see column 1, line 40-54).

Regarding claim 19, the present invention claims the method of treating the subterranean formation wherein fluid's pH ranges from 0 to about 2.9 when EDTA is employed as the chelant. Frenier teaches that the pH of the well treatment fluid preferably is from about 1 to about 4 (see column 4, lines 57-60).

Regarding claim 20, the present invention claims the method of treating the subterranean formation wherein the injection is performed at a pressure from about 14 psi to about 20,000 psi. Frenier teaches that the injecting is performed at a pressure from about 14 psi to about 10,000 psi (see claim 29).

Regarding claim 21, the present invention claims the method of treating the subterranean formation wherein the pH adjustment chemical is selected from the group consisting of an organic acid, a mineral acid, and a base. Frenier teaches wherein the pH controller agent is selected from the group consisting of an organic acid, a mineral acid, and a base (see claim 31).

Regarding claim 22, the present invention claims the method of treating the subterranean formation wherein the formation is at a temperature from about 100 degree F to about 400 degree F. Frenier teaches that the formation is at a temperature from about 100 degree F to about 350 degree F (see claim 39).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The grammatical construction of the claim is not proper. Applicant's use of the term "comprises" is does not make sense. The examiner notes that "the whole comprises the parts" it is improper to infer that "the parts comprise the whole". In this instance, composition comprises 0.1 to 2 moles per chelant per liter of fluid.

Claim 17 (claim 16 second occurrence) is rejected to under 37 CFR 1.75, as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 17 is claimed as dependent on the method claim of claim 9. Claim 9, however, is a composition claim and not a method claim.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATNAF ADMASU whose telephone number is (571)270-5465. The examiner can normally be reached on M-F 7:30-5.00, Flexible Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 4174

ATNAF ADMASU
Examiner
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/ASA/